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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/501,927	01/07/2005	Masaru Makagawa	256443US0XPCT	2154

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OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.  
1940 DUKE STREET  
ALEXANDRIA, VA 22314

EXAMINER

WU, IVES J

ART UNIT PAPER NUMBER

1713

DATE MAILED: 03/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/501,927	MAKAGAWA ET AL.	
	Examiner	Art Unit	
	Ives Wu	1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 23 December 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☐ Claim(s) 1-6 and 8-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date. _____  | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

(1). Applicant's Amendments and Remarks filed on December 23, 2005 have been received and fully acknowledge with the following results.

Claim 7 is cancelled. Claims 8 – 10 are newly added.

The rejections of claims 1 – 7 in the prior Office Action dated September 6, 2005 is withdrawn because the English Translation of priority document "Polypropylene based composite resin" filed on February 4, 2002 is available which overcomes the prior art reference Maletzko et al (US006864298B2) by earlier filing date.

A new ground of rejections for claims 1 ~ 6 and 8 ~ 10 is introduced in the succeeding paragraphs.

#### *Claim Rejections - 35 USC § 102/103*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.

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3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

(2). **Claims 1 and 2** are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Nakagawa et al (US006667359B1).

(3). Nakagawa et al disclose a polypropylene composition comprising 55 to 60 wt% of propylene/ethylene block polymer; 20 to 25 wt% of rubber comprising a styrene/ethylene/propylene/styrene block copolymer and/or a styrene/ethylene/1-butene/styrene block polymer and an olefinic elastomer; 18 to 23 wt% of talc. Abstract.

As to the measurement of complex viscosity, shear storage moduli on different conditions in **independent claim 1** and capillary viscosity, crystallization temperature measured by DSC in **dependent claim 2**, in view of substantially identical polypropylene based resin composite disclosed by prior art reference, and disclosed by applicant, it is the examiner's position to believe that the polypropylene based resin composite of prior art reference would inherently possess these physical properties of complex viscosity, shear storage moduli measured on the conditions cited in the applicant's claim 1 and the physical properties of capillary viscosity of 100 Pa.s or less, crystallization temperature of 120 C or higher cited in the applicant's claim 2. Since USPTO does not have proper means to conduct the experiments, the burden is now shifted to the applicant to prove otherwise. *In re Fitzgerald*, 205 USPQ 594 (CCPA 1980).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary

skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

(4). **Claims 3-6 and 8-10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakagawa et al (US006667359B1) in view of Sugimoto et al (US006787076B2), Soliman (US003788923) and Baker et al (US003208823).

(5). As to the polypropylene-based composite resin in **dependent claim 3**, Nakagawa et al disclose the polypropylene composition comprising:

55 to 60 wt% of a propylene-ethylene block copolymer comprising components A, B and C:

(A) a component of 85 to 96 wt% having an intrinsic viscosity  $[\eta]$  (in decalin of 135 °C) of 0.6 to 0.95 dl/g and a stereoregularity index of at least 98.8%, and is insoluble in p-xylene at 25 °C, and boiling n-heptane;

(B) a component of 4 to 15 wt% having an intrinsic viscosity  $[\eta]$  (in decalin of 135 °C) of 5 to 11 dl/g, containing 15 to 37wt% of a unit derived from ethylene, soluble in p-xylene at 25 °C with a melt index at 230 °C. and at 2.16 kgf of 110.200 and 20;

(C) polyethylene component having MI of 110-200 (230 °C and 2.16 kgf);

20 to 25 wt% of rubber comprising components D and E:

(D) a styrene/ethylene/propylene/styrene block copolymer and/or a styrene/ethylene/1-butene/styrene block copolymer, each having melt index of

1 to 10 g/10 min (230 °C, 2.16 kgf);

(E) an olefinic elastomer having melt flow 0.5 to 5g/10 min (230 °C, 2.16 kgf)

Moreover, 18 to 23 wt% of talc having an average particle diameter as measured by laser diffraction method of 3-6  $\mu\text{m}$  is also incorporated into composite resin (Col. 3, line 42-43).

As to the nucleating agent to be 0.0 to 0.3 mass% in **dependent claim 3**, in any event, it can be ZERO.

As to the fine powder silica in an amount of 0.3 to 10 mass%, having particle diameter of 0.1  $\mu\text{m}$  or less in **dependent claim 3**, Nakagawa et al **do not teach** use of powder silica in an amount of 0.3 to 10 mass%, having size to be 0.1  $\mu\text{m}$  or less.

However, Sugimoto et al **teach** the use of fine powder of inorganic oxide such as silica which has a primary particle size less than 10  $\mu\text{m}$ , further preferably from 5 nm to 5  $\mu\text{m}$  in an amount of 0.1 to 10 parts by wt (Col 11, line 32- Col. 12, line 32).

The advantage of using powder silica with particle size 0.1  $\mu\text{m}$  or less, in an amount of 0.1 to 10 % parts by wt is to improve the flowability (Col. 12, line 56-59), Further evidenced by Baker et al that numerous industrial applications for silica such as filler in rubber, paint desirably that silica is in a very fine divided condition (e.g., below 1 micron in size and preferably below 0.1 micron) (Col. 1, line 38-43). Soliman also cites that silica filler is characterized by having hard particles with high modules. It is easily wetted and dispersed readily in the polyethylene polymer. The particles are capable of existing and remaining in a discontinuous phase when impregnated by the polyolefin polymer (Col.3, line 47-53) and the size of silica can be ranged from 40  $\mu\text{m}$  to 100 millimicron for successful use (Col. 4, line 3-12).

Therefore, it would have been obvious at time the invention was made to use the powder silica of with the size 10  $\mu\text{m}$  or less taught by Sugimoto et al, Soliman and Baker et al in the composition of Nakagawa et al in order to obtain above-mentioned advantages.

As to the measurement of complex viscosity, shear storage moduli on different conditions and capillary viscosity, crystallization temperature measured by DSC, in view of substantially identical polypropylene based resin composite disclosed by prior art reference, and disclosed by applicant, it is the examiner's position to believe that the polypropylene based resin composite of prior art reference would inherently possess these physical properties of complex viscosity, shear

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storage moduli measured on the conditions cited in the applicant's claim 1 and the physical properties of capillary viscosity of 100 Pa.s or less, crystallization temperature of 120 C or higher cited in the applicant's claim 2. Since USPTO does not have proper means to conduct the experiments, the burden is now shifted to the applicant to prove otherwise. *In re Best*, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977).

As to the elastomer to be a copolymer of ethylene and  $\alpha$ -olefin in **dependent claim 4**, Nakagawa et al disclose the preferable olefinic elastomer as the component E to be ethylene/1-butene rubber or ethylene/1-octene rubber, Col. 3, line 48-50.

As to the elastomer to be triblock copolymer SEBS or SEPS in the **dependent claim 5**, Nakagawa et al disclose a styrene/ethylene/propylene/styrene block copolymer and/or a styrene/ethylene/1-butene/styrene block copolymer in the polypropylene based resin composite, Col. 3, line 27-29.

As to the elastomer comprising a copolymer of ethylene and  $\alpha$ -olefin and at least one triblock copolymer selected from SEBS and SEPS in the **dependent claim 6**, Nakagawa et al disclose component (E) to be an olefinic elastomer of ethylene and  $\alpha$ -olefin, component (D) to be a SEPS and/or SEBS triblock copolymer, Col. 3, line 28-35, line 48-50.

As to the limitation of **dependent claims 8 and 9**, in view of substantially identical polypropylene based resin composite disclosed by prior art reference, and disclosed by applicant, it is the examiner's position to believe that the polypropylene based resin composite of prior art would inherently possess these shear storage moduli measured on the conditions cited in the applicant's claim 1 satisfying the equation I and II when the value of equation I is 0.6 ~ 0.2 and the equation II when the value of equation II is 0.3 or less. Since USPTO does not have proper means to conduct the experiments, the burden is now shifted to the applicant to prove otherwise. *In re Best*, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977).

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As to the limitation of **dependent claim 10**, since the nucleating agent can be ZERO in dependent claim 3, no selection also meets the requirements.

***Response to Arguments***

Applicant's arguments with respect to claims 1 ~ 6 and 8 ~ 10 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ives Wu whose telephone number is 571-272-4245. The examiner can normally be reached on 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Examiner: Ives Wu

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Date: February 27, 2006



DAVID W. WU  
SENIOR PATENT EXAMINER  
TECHNOLOGY CENTER 1700